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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/808,752	03/15/2001	Scott M. Zimmerman	OM-1670	4335

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EXAMINER

ALANKO, ANITA KAREN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 07/31/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/808,752

Applicant(s)

ZIMMERMAN ET AL.

Examiner

Anita K Alanko

Art Unit

1765

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on amdt "a" 5/30/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3,9-28 and 31-45 is/are pending in the application.
- 4a) Of the above claim(s) 1-3,9-26,35-43 and 45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 28,29,31-34 and 44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

***Election/Restrictions***

Applicant's election with traverse of Group II in Paper No. 8 is acknowledged.

Applicants arguments are not persuasive because the product can be made by a different process such as etching or sand blasting a substrate and then sequentially depositing a polymer and metal layer, instead of laminating a metal/polymer layer to a polymer substrate.

The requirement is still deemed proper and is therefore made FINAL.

***Claim Rejections - 35 USC § 112***

Claims 27-28, 31-34 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 27, line 2, a "first polyamide film" is cited where it appears that applicant intends to cite "first polyimide film." For the purposes of the rejection, claim 22, line 2 is treated as citing "first polyimide film."

As to claim 44, it is unclear how the method limitations further limit the final product. The viscosity and the composition/concentration of the polyimide are related to the weight average molecular weight in the final product. However, since the composition is unknown, the final average molecular weight of the polyimide in the final product is unknown, and therefore the metes and bounds of the claim are unclear.

Claims 28, 31-34 do not cure the indefiniteness of their base claim, and are therefore also rejected.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

*Claims 27, 31-34 are rejected under 35 U.S.C. 102(a) as being clearly anticipated by*

*Takeuchi et al (U.S. Patent No. 6,252,010 B1).*

Takeuchi discloses a composite comprising:

- a polymeric substrate having a first etched surface (col.14, lines 6-15),
- a first polyimide film attached to the first etched surface of the substrate (col.14, lines 16-20; since a polyamideimide comprises polyimide), and
- a layer of a metal foil attached to an opposite side of the first polymeric film (col.14, lines 21-22),
- wherein the peel strength is at least 4 lbs/inch (col.23, lines 46-47)

As to claims 31-32, the metal film comprises copper (col.14, lines 6-22).

As to claims 33-34, the first polymeric film has a thickness of 30 microns or less (col.14, lines 25-26) and the metal foil has a thickness of 18 microns (col.23, lines 5-9).

As to claim 44, process limitations are given little patentable weight in product claims.

The viscosity has no effect that can be determined by the examiner on the final product.

*Claims 27-28, 31-34 and 44 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Suzuki et al (U.S. Patent No. 5,234,522).*

Suzuki discloses a composite comprising:

- a polymeric substrate having a first etched surface (col.3, lines 1-22),
- a first polyimide film attached to the first etched surface of the substrate (col.3, lines 32-33), and
- a layer of a metal foil attached to an opposite side of the first polyimide film (col.7, lines 35-40, the surface bearing a circuit encompasses comprising a metal foil);
- wherein the resulting printed circuit board composite has a peel strength of at least 4 lbs/inch (col.9, lines 53-56).

As to claim 28, Suzuki discloses that the composite may comprise a double-sided copper-clad polyimide film (col.8, lines 1-8).

As to claims 31-32, the metal film comprises copper (col.8, lines 1-8).

As to claims 33-34, the first polymeric film has a thickness of 40 microns (col.9, line 31) and the metal foil has a thickness of 35 microns (col.9, line 38).

As to claim 44, process limitations are given little patentable weight in product claims. The viscosity has no effect that can be determined by the examiner on the final product.

#### ***Response to Amendment***

The 102 rejection over Viehbeck is withdrawn. Applicant's point is well taken that Viehbeck discloses a lower peel strength than is now cited.

The 102 rejection over Takeuchi stands. Applicant argues that polyamideimide does not encompass polyimide. This is not persuasive as the claims have open "comprising" language, and a polyamideimide comprises polyimide.

### *Examiner's Remarks*

Applicant is requested to clarify that, in claim 44, that the polyimide is in the solvent solution, and not a polyimide precursor (polyamic acid).

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. RD 0289057 and Itaya et al (JP 10-095847 A) are cited to show printed circuit boards with etched polyimide which appear to be 102/103 references for the claims.

RD 0339037, JP 63-148658 A, and Jablonski (US 6143356) are cited to show etched polyimide to provide for increased adhesion between polyimide and polyimide, and/or between polyimide and metal. Pommer et al ([0025], [0026] and table on page 3), Satoh (col.3, lines 32-38, col.4, lines 18-20) and Sachdev et al (example 5) are also cited to show etching of polyimide to increase adhesion.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K Alanko whose telephone number is 703-305-7708. The examiner can normally be reached on Monday-Wednesday and Friday, 8:00 am-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin L Utech can be reached on 703-308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

*Anita K. Alanko*  
Anita K Alanko  
Primary Examiner  
Art Unit 1765

AKA  
July 28, 2003